

CLAIMS

What is claimed is:

1. A boot seal for a mechanical joint, the mechanical joint having a rotary joint member, the boot seal comprising:

a flexible body portion; and

a flange end coupled to the body portion, the flange end including a flange seal portion and an annular lip, the flange seal portion being configured to seal against the joint member in a direction that is generally transverse to a longitudinal axis of the flange end, the annular lip extending circumferentially about the flange seal portion and shielding the flange seal portion from debris and water.

2. The boot seal of Claim 1, wherein a distal end of the flange seal portion extends axially away from the body portion by a first dimension and a distal end of the annular lip extends axially away from the body portion by a second dimension that is about equal to the first dimension.

3. The boot seal of Claim 1, wherein the flange end includes an attachment portion that is configured to sealingly engage an outside dimension of the joint member.

4. The boot seal of Claim 3, wherein the attachment portion is a cylindrical bore that is configured to resiliently expand over the joint member.

5. The boot seal of Claim 1, wherein the flange end includes a plurality of radially extending rib members that interconnect the annular lip and at least one of the body portion and the flange seal portion.

6. The boot seal of Claim 1, wherein a distal end of the annular lip includes a first portion, which extends generally radially outwardly from the flange seal portion, and a second portion that is transverse to the first portion.

7. The boot seal of Claim 6, wherein the second portion is generally concentrically disposed about a longitudinal axis of the flange seal portion.

8. The boot seal of Claim 6, wherein an outside diameter of the distal end of the annular lip has a magnitude that is about twice a magnitude of an inside diameter of flange seal portion.

9. The boot seal of Claim 6, wherein a generally U-shaped cavity is formed between the flange seal portion and the distal end of the annular lip.

10. The boot seal of Claim 1, wherein a chamfer is formed on a leading edge of the flange seal portion.

11. A mechanical joint comprising:

a first joint member that is mounted for rotation about an axis;

a second joint member rotatably coupled to the first joint member;

a boot seal for covering at least a portion of the first and second joint members, the boot seal having a body portion and a flange end, the body portion being hollow to shroud therein at least a portion of one of the first and second joint members, the flange end including a flange seal portion and an annular lip, the flange seal portion being coupled to the body portion at a first end and resiliently and sealingly engaging the first joint member at a second end such that the boot seal is coupled for rotation with the first joint member, the annular lip extending radially outwardly from the flange and shrouding the second end of the flange seal portion;

wherein rotation of the boot seal generates a centrifugal force that tends to sling water and debris proximate the second end of the flange seal portion in a radially outward direction.

12. The mechanical joint of Claim 11, wherein the flange seal portion includes a generally cylindrical bore that is sized to resiliently expand over the first joint member.

13. The mechanical joint of Claim 11, wherein the flange end includes a plurality of radially extending rib members that interconnect the annular lip and at least one of the body portion and the flange seal portion.

14. The mechanical joint of Claim 11, wherein a distal end of the annular lip includes a first portion, which extends generally radially outwardly from the flange seal portion, and a second portion that is transverse to the first portion.

15. The mechanical joint of Claim 14, wherein an outside diameter of the distal end of the annular lip has a magnitude that is about twice a magnitude of an inside diameter of flange seal portion.

16. The mechanical joint of Claim 14, wherein a generally U-shaped cavity is formed between the flange seal portion and the distal end of the annular lip.

17. The mechanical joint of Claim 11, wherein a chamfer is formed on a leading edge of the flange seal portion.